# (12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

# (19) World Intellectual Property Organization

International Bureau





## (43) International Publication Date 14 October 2004 (14.10.2004)

## PCT

# (10) International Publication Number WO 2004/086941 A2

(51) International Patent Classification7:

**A61B** 

(21) International Application Number:

PCT/US2004/009172

(22) International Filing Date: 25 March 2004 (25.03.2004)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

60/458,769 60/505,944 27 March 2003 (27.03.2003) US 25 September 2003 (25.09.2003) US

(71) Applicant (for all designated States except US): BARTRON MEDICAL IMAGING, LLC [US/US]; 235 Blake Street, New Haven, CT 06515 (US).

(72) Inventor; and

(75) Inventor/Applicant (for US only): WALKER, Fitz, Jr. [US/US]; 235 Blake Street, Mew Haven, CT 06515 (US).

(74) Agent: NUZZO, Raymond, A.; Law Offices of Raymond A. Nuzzo, LLC, 579 Thompson Avenue, East Haven, CT 06512 (US). (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

### Declaration under Rule 4.17:

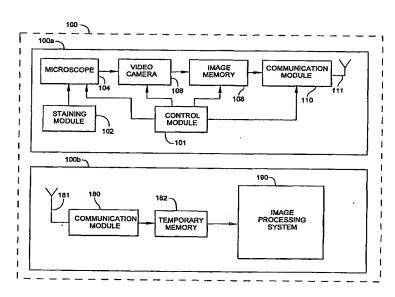
of inventorship (Rule 4.17(iv)) for US only

#### Published:

 without international search report and to be republished upon receipt of that report.

[Continued on next page]

(54) Title: SYSTEM AND METHOD FOR RAPIDLY IDENTIFYING PATHOGENS, BACTERIA AND ABNORMAL CELLS



(57) Abstract: The present invention achieves rapid identification of pathogens, bacteria, cancer cells and other abnormal human and animal cells. In one embodiment, the system of the present invention comprises a first subsystem that obtains and processes images of specimens of pathogens, bacteria, and other abnormal cells, and a second subsystem that accepts the images, isolates the particular features of the image using advanced image segmentation, and then rapidly and accurately identifies the pathogens, bacteria and other abnormal cells by using a pattern recognition process wherein the segmented or isolated features of the original image are compared to known reference images.



## 

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.